

**REMARKS**

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. Claim Status / Explanation of Amendments

Claims 1-4, 7, and 15-19 are pending and were rejected pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,500,537 to Araki, et al. ("Araki") in view of Japanese Patent No. JP 01255798 to Kobayashi, et al. ("Kobayashi"). [12/28/07 Office Action, p. 2].

By this paper claim 1 is amended to recite, *inter alia*, a "coating composition for forming a wear resistant and seizure resistant layer on sliding parts." Support for the amendment to claim 1 may be found throughout the application as originally filed including, for example, p. 2, lns. 1-2. No new matter will be introduced into this application by entry of this amendment. Entry is respectfully requested.

B. Claims 1-4, 7, and 15-19 are Patentable over Araki in view of Kobayashi

Applicants respectfully traverse the rejection of claims 1-4, 7, and 15-19 under 35 U.S.C. § 103(a) as allegedly being unpatentable for obviousness. As set forth in detail below, Araki and Kobayashi, whether alone or in combination, do not teach, disclose, or suggest each and every element of these claims. In particular, the cited references fail to disclose the incorporation of titanium oxide powder in an amount from 5 % to 35 % by mass. Accordingly, the Section 103 rejection is respectfully traversed.

Applicants' claim 1, as amended, recites:

1. A coating composition for forming a wear resistant and seizure resistant layer on sliding parts, wherein the composition comprises

a binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% by mass to 100% by mass based on 100% by mass of the binder resin, titanium oxide powder in an amount of from 5% by mass to 35% by mass based on 100% by mass of the binder resin, and a silane coupling agent in an amount of from 0.1% by mass to 10% by mass based on 100% by mass of the binder resin.

Araki is directed to a non-stick composite material for use in office automation equipment. In one aspect, Araki discloses application of a thin film composite material comprising a fluorine-containing polymer to a substrate. [Araki, Abstract and Col. 5, lns. 62-67]. Araki further discloses embodiments involving polytetrafluoroethylene (PTFE) [Araki, Col. 13, lns. 53-56], polyimide or polyamide-imide [Araki, Col. 6, lns. 14-21], a coupling agent [Araki, Col. 18, lns. 9-20], and titanium oxide powder as an additive [Araki, Col. 14, lns. 45-54]. The Office Action recognizes that Araki does not expressly disclose the amounts of PTFE, silane coupling agent, and titanium oxide powder as claimed by Applicants. However, the Office Action contends that it would have been obvious to adjust individual compositions to an appropriate amount in order to obtain desired results. [12/28/07 Office Action, p. 3-4].

Applicants respectfully disagree and note that the desired sliding film characteristics cannot be obtained by independently adjusting each individual constituent. Rather, the individual constituents interact in a nonobvious way upon mixing with the material properties of the resulting sliding film being determined not only by the relative amounts of each constituent added, but also by the manner in which the film itself is processed. Thus, Applicants respectfully assert that the specific concentration ranges recited by Applicant and the unique and beneficial properties of the sliding film so obtained were not the result of optimization by routine experimentation.

Furthermore, as was asserted in Applicants' reply dated October 11, 2007, Araki fails to disclose that the fluorine-containing polymer (e.g., the composite material) contains polyimide or polyamide-imide as the binder resin. Rather, Araki merely discloses the application of the fluorine-containing polymer to a substrate fabricated from polyimide or polyamide-imide. Since Araki's coating composition does not contain polyimide or polyamide-imide as the binder resin, Araki does not, in fact, teach a coating composition comprising the elements of claim 1 as specified by the Office Action.

In attempting to remedy deficiencies in Araki, the Office Action introduces Kobayashi which is directed to a high rigidity sliding material comprising a synthetic resin blended with titania fibers. The Office Action contends that Kobayashi discloses the utilization of 5-50 wt. % of titania which overlaps with Applicants' claimed titanium oxide powder range of 5 to 35 % by mass. [12/28/07 Office Action, p. 3]. Applicants respectfully note, however, that Kobayashi discloses the use of *titania fibers* as opposed to a "titanium oxide powder" as recited in pending claim 1. Composite materials will, in fact, behave quite differently depending on the particular form of the additive whether it be, for example, as fibers with a particular diameter and length or as a powder comprised of spherical particles with a specified diameter. Thus, Applicants' titanium oxider powder concentration range cannot be considered obvious in view of Kobayashi's titania fibers.

Furthermore, Applicants respectfully assert that Kobayashi merely discloses that the resin itself contains titania fibers and provides no teaching, suggestion, or motivation for utilizing this in a "coating composition for forming a wear resistant and seizure resistant layer on sliding parts" as recited in amended claim 1. As such, a person of ordinary skill in the art would not be inclined to combine the teachings of Kobayashi with those of Araki to obtain the claimed coating

composition. Moreover, even if such a combination were made, Kobayashi fails to overcome the above-identified deficiencies in Araki.

Accordingly, Araki and Kobayashi - whether alone or in combination - fail to teach disclose, or suggest a "coating composition for forming a wear resistant and seizure resistant layer on sliding parts" comprising the combination of a "binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% ... to 100% by mass ..., titanium oxide powder in an amount of from 5% ... to 35% by mass ..., and a silane coupling agent in an amount of from 0.1% ... to 10% by mass based on 100% by mass of the binder resin" as recited in Applicants' amended claim 1. Applicants submit claim 1 is patentably distinct from Araki and Kobayashi for at least this reason. Since claims 2-4, 7, and 15-19 depend either directly or indirectly from claim 1 they are asserted to be allowable for at least similar reasons. Consequently, the Section 103 obviousness rejection should be withdrawn.

Applicants have chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Furthermore, Applicants have not specifically addressed the rejections of the dependent claims. Applicants respectfully submit that the independent claim from which they depend is in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicants, however, reserve the right to address such rejections of the dependent claims in the future as appropriate.

### **CONCLUSION**

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the

event that a telephone conference would facilitate the examination of this application in any way,  
the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 5000-5167.

Respectfully submitted,  
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